

# Apple II Technical Notes



## Developer Technical Support

### Apple IIGS #12: Tool Set Interdependencies

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May 1992  
April 1987

This Technical Note lists all known interdependencies between system tool sets on the Apple IIGS.  
**Changes since January 1990:** Added new and changed dependencies for System Software 6.0.

A tool set is dependent upon another if you must start the latter before starting the former. You should start tool sets in the order listed below. Names marked with an asterisk (\*) indicate a recommendation to start the corresponding tool set, but the order is not required for operation of the dependent tool. Apple recommends using **StartUpTools** to start up all the tool sets your application needs. See the *Apple IIGS Toolbox Reference*, Volume 3 for more details.

### Tool Set Interdependencies

#### Tool Locator

#### Tool #1 (\$01)

No dependencies. Always start this tool set before any others.

#### Memory Manager

#### Tool #2 (\$02)

Tool Locator (#1)

#### Miscellaneous Tools

#### Tool #3 (\$03)

Tool Locator (#1)  
Memory Manager (#2)

#### QuickDraw II

#### Tool #4 (\$04)

Tool Locator (#1)  
Memory Manager (#2)  
Miscellaneous Tools (#3)

#### Desk Manager

#### Tool #5 (\$05)

Tool Locator (#1)  
Memory Manager (#2)  
Miscellaneous Tools (#3)  
QuickDraw II (#4)  
Event Manager (#6)  
Window Manager (#14)  
Control Manager (#16)  
Menu Manager (#15)  
Line Edit (#20)  
Dialog Manager (#21)  
Scrap Manager (#22)

#### Event Manager

#### Tool #6 (\$06)

|  |       |  |
|--|-------|--|
| Tool Locator                                     | (#1)  |  |
| Memory Manager                                   | (#2)  |  |
| Miscellaneous Tools                              | (#3)  |  |
| <b>Scheduler</b>                                 |       | <b>Tool #7 (\$07)</b>  |
| Tool Locator                                     | (#1)  |  |
| Memory Manager                                   | (#2)  |  |
| Miscellaneous Tools                              | (#3)  |  |
| <b>Sound Tools Set</b>                           |       | <b>Tool #8 (\$08)</b>  |
| Tool Locator                                     | (#1)  |  |
| Memory Manager                                   | (#2)  |  |
| Miscellaneous Tools                              | (#3)  |  |
| <b>Apple Desktop Bus (ADB)</b>                   |       | <b>Tool #9 (\$09)</b>  |
| Tool Locator                                     | (#1)  |  |
| <b>SANE (Standard Apple Numeric Environment)</b> |       | <b>Tool #10 (\$0A)</b>   |
| Tool Locator                                     | (#1)  |  |
| Memory Manager                                   | (#2)  |  |
| <b>Integer Math Tools</b>                        |       | <b>Tool #11 (\$0B)</b>   |
| Tool Locator                                     | (#1)  |  |
| <b>Text Tools</b>                                |       | <b>Tool #12 (\$0C)</b>   |
| Tool Locator                                     | (#1)  |  |
| <b>Window Manager</b>                            |       | <b>Tool #14 (\$0E)</b>   |
| Tool Locator                                     | (#1)  |  |
| Memory Manager                                   | (#2)  |  |
| Miscellaneous Tools                              | (#3)  |  |
| QuickDraw II                                     | (#4)  |  |
| Event Manager                                    | (#6)  |  |
| * QuickDrawAuxiliary                             | (#18) | Required in 6.0 and later, and the Window Manager loads and starts it for you. |
| Control Manager                                  | (#16) |  |
| Menu Manager                                     | (#15) |  |
| * Line Edit                                      | (#20) | For AlertWindow call only  |
| * Font Manager                                   | (#27) | For AlertWindow call only  |
| * ResourceManager                                | (#30) | For using resources in Window Manager calls.                                   |

**Menu Manager**

|                     |       |
|---------------------|-------|
| Tool Locator        | (#1)  |
| Memory Manager      | (#2)  |
| Miscellaneous Tools | (#3)  |
| QuickDraw II        | (#4)  |
| Event Manager       | (#6)  |
| Window Manager      | (#14) |
| Control Manager     | (#16) |
| * ResourceManager   | (#30) |

**Tool #15 (\$0F)**

For using resources in Menu Manager calls.

**Control Manager**

|                       |       |
|-----------------------|-------|
| Tool Locator          | (#1)  |
| Memory Manager        | (#2)  |
| Miscellaneous Tools   | (#3)  |
| QuickDraw II          | (#4)  |
| Event Manager         | (#6)  |
| Window Manager        | (#14) |
| Menu Manager          | (#15) |
| * QuickDraw Auxiliary | (#18) |
| * Line Edit           | (#20) |
| * Font Manager        | (#27) |
| * List Manager        | (#28) |
| * ResourceManager     | (#30) |
| * Text Edit           | (#34) |

**Tool #16 (\$10)**

For `statText` controls.  
 For `editLine` controls.  
 For `statText` controls.  
 For `list` controls.  
 For using resources in Control Manager calls.  
 For `editText` controls.

**Note:** You should consider the Window, Control, and Menu Managers as one unit and start them in the given order.

**System Loader**

|                     |      |
|---------------------|------|
| Tool Locator        | (#1) |
| Memory Manager      | (#2) |
| Miscellaneous Tools | (#3) |

**Tool #17 (\$11)****QuickDraw Auxiliary Routines**

|                     |       |
|---------------------|-------|
| Tool Locator        | (#1)  |
| Memory Manager      | (#2)  |
| Miscellaneous Tools | (#3)  |
| QuickDraw II        | (#4)  |
| * Font Manager      | (#27) |

**Tool #18 (\$12)**

**Note:** QuickDraw Auxiliary uses the Font Manager in the picture drawing routines. For proper operation, you should start the Font Manager before using the QuickDraw Auxiliary picture routines; however, the picture routines do not fail if the Font Manager is not present.

**Print Manager**

|                     |       |
|---------------------|-------|
| Tool Locator        | (#1)  |
| Memory Manager      | (#2)  |
| Miscellaneous Tools | (#3)  |
| QuickDraw II        | (#4)  |
| QuickDraw Auxiliary | (#18) |
| Event Manager       | (#6)  |
| Window Manager      | (#14) |
| Control Manager     | (#16) |
| Menu Manager        | (#15) |
| Line Edit           | (#20) |
| Dialog Manager      | (#21) |
| List Manager        | (#28) |
| Font Manager        | (#27) |

**Tool #19 (\$13)****Line Edit**

|                       |       |
|-----------------------|-------|
| Tool Locator          | (#1)  |
| Memory Manager        | (#2)  |
| Miscellaneous Tools   | (#3)  |
| QuickDraw II          | (#4)  |
| Event Manager         | (#6)  |
| * QuickDraw Auxiliary | (#18) |
| Scrap Manager         | (#22) |
| * Font Manager        | (#27) |

**Tool #20 (\$14)**

For Text2 items; see below.  
For Text2 items; see below.

**Dialog Manager**

|                       |       |
|-----------------------|-------|
| Tool Locator          | (#1)  |
| Memory Manager        | (#2)  |
| Miscellaneous Tools   | (#3)  |
| QuickDraw II          | (#4)  |
| Event Manager         | (#6)  |
| Window Manager        | (#14) |
| Control Manager       | (#16) |
| Menu Manager          | (#15) |
| * QuickDraw Auxiliary | (#18) |
| Line Edit             | (#20) |
| * Font Manager        | (#27) |

**Tool #21 (\$15)**

For Text2 items; see below.  
For Text2 items; see below.

**Note:** Line Edit, the Dialog Manager, and the Control Manager require the presence of the Font Manager and QuickDraw Auxiliary if you use LETextBox2, statText controls, or LongStatText2 items which require any font styling (e.g., outline, boldface, etc.).

**Scrap Manager**

|                |      |
|----------------|------|
| Tool Locator   | (#1) |
| Memory Manager | (#2) |

**Tool #22 (\$16)**

**Standard File Operations**

|                       |       | <b>Tool #23 (\$17)</b>   |
|-----------------------|-------|--|
| Tool Locator          | (#1)  |  |
| Memory Manager        | (#2)  |  |
| Miscellaneous Tools   | (#3)  |  |
| QuickDraw II          | (#4)  |  |
| Event Manager         | (#6)  |  |
| Window Manager        | (#14) |  |
| Control Manager       | (#16) |  |
| Menu Manager          | (#15) |  |
| * QuickDraw Auxiliary | (#18) | Required in 6.0 and later, and the Window Manager loads and starts it for you. |
| Line Edit             | (#20) |  |
| Dialog Manager        | (#21) |  |
| * List Manager        | (#28) |  |
| * Resource Manager    | (#30) | For using resources in Standard File Operations calls.                         |

**Note:** Standard File 3.0 and later use the List Manager for displaying a list of file names. Although Standard File functions properly if the application has not started the List Manager, it saves time if the application does so.

**Note Synthesizer**

|                |      | <b>Tool #25 (\$19)</b> |
|----------------|------|------------------------|
| Tool Locator   | (#1) |                        |
| Memory Manager | (#2) |                        |
| Sound Tools    | (#8) |                        |

**Note Sequencer**

|                  |       | <b>Tool #26 (\$1A)</b> |
|------------------|-------|------------------------|
| Tool Locator     | (#1)  |                        |
| Memory Manager   | (#2)  |                        |
| Sound Tools      | (#8)  |                        |
| Note Synthesizer | (#25) |                        |

**Note:** The Note Sequencer automatically handles the start and shutdown of the Free-Form Sound Tools (#8) and the Note Synthesizer (#25), so programs that use the Note Sequencer must **not** execute start or shutdown calls for those tools. Automatic start does not imply automatic **loading**. If you plan to use the Note Sequencer, you must still load the Free-Form Sound Tool and the Synthesizer Tool explicitly through calls to the Tool Locator routines **LoadTools** or **LoadOneTool** or by calling the System Loader and Tool Locator directly in appropriate cases.

**Font Manager**

|                       |       | <b>Tool #27 (\$1B)</b>                              |
|-----------------------|-------|---|
| Tool Locator          | (#1)  |   |
| Memory Manager        | (#2)  | For <b>ChooseFont</b> call only.                    |
| * Miscellaneous Tools | (#3)  |   |
| QuickDraw II          | (#4)  |   |
| * Integer Math Tools  | (#11) | For <b>ChooseFont</b> call only.                    |
| * Window Manager      | (#14) | For <b>ChooseFont</b> call only.                    |
| * Control Manager     | (#16) | For <b>ChooseFont</b> call only.                    |
| * Menu Manager        | (#15) | For <b>FixFontMenu</b> call only.                   |
| * List Manager        | (#28) | For <b>FixFontMenu</b> and <b>ChooseFont</b> calls. |
| * Line Edit           | (#20) | For <b>ChooseFont</b> call only.                    |
| * Dialog Manager      | (#21) | For <b>ChooseFont</b> call only.                    |

**List Manager**

|                     |       |
|---------------------|-------|
| Tool Locator        | (#1)  |
| Memory Manager      | (#2)  |
| Miscellaneous Tools | (#3)  |
| QuickDraw II        | (#4)  |
| Event Manager       | (#6)  |
| Window Manager      | (#14) |
| Control Manager     | (#16) |
| Menu Manager        | (#15) |

**Tool #28 (\$1C)****Audio Compression and Expansion (ACE)**

|                |      |
|----------------|------|
| Tool Locator   | (#1) |
| Memory Manager | (#2) |

**Tool #29 (\$1D)****Resource Manager**

|                |      |
|----------------|------|
| Tool Locator   | (#1) |
| Memory Manager | (#2) |

**Tool #30 (\$1E)****MIDI Tools**

|                     |       |
|---------------------|-------|
| Tool Locator        | (#1)  |
| Memory Manager      | (#2)  |
| Miscellaneous Tools | (#3)  |
| Sound Manager       | (#8)  |
| * Note Synthesizer  | (#25) |

**Tool #32 (\$20)**

**Note:** The MIDI Tools require the Note Synthesizer if you intend to use the MIDI clock feature. If you are not using the MIDI clock, the Note Synthesizer is not required.

**Text Edit**

|                     |       |
|---------------------|-------|
| Tool Locator        | (#1)  |
| Memory Manager      | (#2)  |
| Miscellaneous Tools | (#3)  |
| QuickDraw II        | (#4)  |
| Event Manager       | (#6)  |
| Window Manager      | (#14) |
| Menu Manager        | (#15) |
| Control Manager     | (#16) |
| QuickDraw Auxiliary | (#18) |
| Scrap Manager       | (#22) |
| Font Manager        | (#27) |
| * Resource Manager  | (#30) |

**Tool #34 (\$22)**

For using resources in Text Edit calls.

**MIDI Synth**

|                     |      |
|---------------------|------|
| Tool Locator        | (#1) |
| Memory Manager      | (#2) |
| Miscellaneous Tools | (#3) |
| Sound Tools         | (#8) |

**Tool #35 (\$23)****Media Control Tool**

|                     |       |
|---------------------|-------|
| Tool Locator        | (#1)  |
| Memory Manager      | (#2)  |
| Miscellaneous Tools | (#3)  |
| Integer Math        | (#11) |
| Resource Manager    | (#30) |

**Tool #38 (\$26)**

## Recommended Start Order

A close look at the preceding information will reveal apparent “circular dependencies” between various tool sets (i.e., two or more tool sets may depend upon each other). To resolve the issue of which tool set to start first in such a situation, here is a list of the most commonly used tool sets, given in the order in which an application should start them. You may start those tools which are indented at a specific level at that time or any time thereafter.

|                          |       |
|--------------------------|-------|
| Tool Locator             | (#1)  |
| ADB Tools                | (#9)  |
| Integer Math Tools       | (#11) |
| Text Tools               | (#12) |
| Memory Manager           | (#2)  |
| SANE                     | (#10) |
| ACE                      | (#29) |
| Resource Manager         | (#30) |
| Miscellaneous Tools      | (#3)  |
| Scheduler                | (#7)  |
| System Loader            | (#17) |
| Media Control            | (#38) |
| QuickDraw II             | (#4)  |
| QuickDraw II Auxiliary   | (#18) |
| Event Manager            | (#6)  |
| Window Manager           | (#14) |
| Control Manager          | (#16) |
| Menu Manager             | (#15) |
| Line Edit                | (#20) |
| Dialog Manager           | (#21) |
| <i>either</i>            |       |
| Sound Tools then         | (#8)  |
| Note Synthesizer         | (#25) |
| <i>or</i>                |       |
| Note Sequencer           | (#26) |
| MIDI Tools               | (#32) |
| MIDI Synth               | (#35) |
| Standard File Operations | (#23) |
| Scrap Manager            | (#22) |
| List Manager             | (#28) |
| Font Manager             | (#27) |
| Print Manager            | (#19) |
| Text Edit                | (#34) |
| Desk Manager             | (#5)  |

System LoaderStartup does nothing.

**Note:** Although you may start the sound-related tools any time after the Miscellaneous Tools, we recommend you start them after most of the Desktop-related tools. We also recommend you start the Desk Manager last and shut it down first.

### Further Reference

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- *Apple II GS Toolbox Reference*